CLAIMS

1. A reactor wall coating in a fluidized bed reactor, the coating having a thickness of at least 100 μm and a molecular weight distribution comprising a major peak having:

(a) an Mw/Mn ratio of less than 10;

(b) an Mz/Mw ratio of less than 7, and

(c) a maximum value of d(wt%)/d(log MW) at less than 25,000 daltons in a plot of d(wt%)/d(log MW), where MW is the molecular weight in daltons.

2. The reactor wall coating of claim 1, wherein the thickness is at least 125 μm.

3. The reactor wall coating of claim 1, wherein the thickness is at least 150 μm.

4. The reactor wall coating of claim 1, wherein the Mw/Mn ratio is less than 4.

5. The reactor wall coating of claim 1, wherein the Mz/Mw ratio is less than 4.

6. The reactor wall coating of claim 1, wherein the maximum value of d(wt%)/d(log MW) is at less than 15,000 daltons.

7. The reactor wall coating of claim 1, wherein the maximum value of d(wt%)/d(log MW) is at less than 13,000 daltons.

8. The reactor wall coating of claim 1, wherein the major peak has an Mn value of less than 7000.

9. The reactor wall coating of claim 1, wherein the coating has an initial voltage potential V_0 of at least 400 V, where V_0 is the absolute value of the voltage potential measured immediately after application of a charging voltage potential of 9 kV for a period of 20 ms.

10. The reactor wall coating of claim 9, wherein V_0 is at least 600 V.

11. The reactor wall coating of claim 9, wherein V_0 is at least 800 V.

12. The reactor wall coating of claim 9, wherein V_0 is at least 1000 V.

13. The reactor wall coating of claim 9, wherein the coating has a voltage retention value V_{60} of at least $0.8V_0$, where V_{60} is the absolute value of the voltage potential measured 60 s after application of the charging voltage potential.

14. The reactor wall coating of claim 13, wherein V_{60} is at least $0.9V_0$.

15. The reactor wall coating of claim 9, wherein the coating has a voltage retention value V_{120} of at least $0.75V_0$, where V_{120} is the absolute value of the voltage potential measured 120 s after application of the charging voltage potential.

16. The reactor wall coating of claim 15, wherein V_{120} is at least $0.8V_0$.

17. The reactor wall coating of claim 15, wherein V_{120} is at least $0.9V_0$.

18. The reactor wall coating of claim 9, wherein the coating has a voltage retention value V_{300} of at least $0.75V_0$, where V_{300} is the absolute value of the voltage potential measured 300 s after application of the charging voltage potential.

19. The reactor wall coating of claim 18, wherein V_{300} is at least $0.8V_0$.

20. The reactor wall coating of claim 1, wherein the major peak contains at least 50 wt% of the total weight of the molecular weight distribution.

21. The reactor wall coating of claim 1, wherein the major peak contains at least 60 wt% of the total weight of the molecular weight distribution.

22. The reactor wall coating of claim 1, wherein the major peak contains at least 70 wt% of the total weight of the molecular weight distribution.

23. A process for forming a coating on a reactor wall in a fluidized bed reactor, the process comprising polymerizing olefin monomer in the reactor in the presence of bimetallic catalyst and an aluminum alkyl cocatalyst to form a reactor wall coating having a thickness of at least 100 μm, wherein the bimetallic catalyst comprises a non-metallocene transition metal compound and a metallocene compound on an inorganic oxide support.

24. The process of claim 23, wherein the olefin monomer comprises ethylene.

25. The process of claim 23, wherein the olefin monomer comprises ethylene and comonomer selected from propylene, C_4-C_{20} alpha olefins, and mixtures thereof.

26. The process of claim 23, wherein the aluminum alkyl cocatalyst comprises trimethylaluminum.

27. The process of claim 23, wherein the non-metallocene transition metal compound is selected from titanium halides, titanium oxyhalides, titanium alkoxyhalides, vanadium halides, vanadium oxyhalides, vanadium alkoxyhalides, and mixtures thereof.

28. The process of claim 23, wherein the metallocene compound is a substituted, unbridged bis-cyclopentadienyl compound.

29. The process of claim 23, wherein the inorganic oxide support comprises silica.

30. The process of claim 23, wherein the process is effective to form a reactor wall coating at a rate of at least 20 μm/day, averaged over a period of 5 days.

31. The process of claim 23, wherein the process is effective to form a reactor wall coating at a rate of at least 25 μm/day, averaged over a period of 5 days.

32. The process of claim 23, wherein the process is effective to form a reactor wall coating at a rate of at least 30 μm/day, averaged over a period of 5 days.

33. The process of claim 23, wherein the reactor wall coating has a thickness of at least 125 μm.

34. The process of claim 23, wherein the reactor wall coating has a thickness of at least 150 μm.

35. A process for forming a coating in situ on a reactor wall of a fluidized bed reactor during polymerization, the process comprising:

(a) providing a fluidized bed reactor comprising a reaction vessel having an interior reactor wall;

(b) polymerizing olefin monomer in the reactor in the presence of bimetallic catalyst and an aluminum alkyl cocatalyst to form a reactor wall coating on the interior reactor wall, the coating having a thickness of at least 100 μm, wherein the bimetallic catalyst comprises a non-metallocene transition metal compound and a metallocene compound on an inorganic oxide support; and

(c) recovering polymerized olefin.

36. The process of claim 35, wherein prior to the step of polymerizing, the interior reactor wall is provided essentially free of reactor wall coating.

37. The process of claim 35, wherein prior to the step of polymerizing, the interior reactor wall is provided having a reactor wall coating of less than 100 μm.

38. The process of claim 35, wherein prior to the step of polymerizing, the interior reactor wall is provided having a reactor wall coating of less than 50 μm.

39. The process of claim 35, wherein prior to the step of polymerizing, the interior reactor wall is provided having a reactor wall coating of less than 20 μm.

40. The process of claim 35, wherein prior to the step of polymerizing, the interior reactor wall is provided having a reactor wall coating of less than 10 μm.

41. The process of claim 35, wherein the polymerization is carried out without removing from the interior reactor wall a previously applied wall coating.